



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/932,121	08/16/2001	Lorenzo Casaccia	010345	4277

23696 7590 06/27/2007
QUALCOMM INCORPORATED
5775 MOREHOUSE DR.
SAN DIEGO, CA 92121

EXAMINER

MOORE JR, MICHAEL J

ART UNIT	PAPER NUMBER
----------	--------------

2616

NOTIFICATION DATE	DELIVERY MODE
-------------------	---------------

06/27/2007

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

us-docketing@qualcomm.com
kscanla@qualcomm.com
nanm@qualcomm.com

Office Action Summary

Application No.

09/932,121

Applicant(s)

CASACCIA ET AL.

Examiner

Michael J. Moore, Jr.

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-16 and 19-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-16 and 19-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/14/06 has been entered.

Specification

2. The disclosure is objected to because of the following informalities:

On page 1, in the "Related Applications" section, currently the related U.S. patent application serial number is missing. Also, "Attorney Docket No. 010446" should be deleted.

Also, on page 4, in the "Brief Description of the Drawings" section, in paragraph 1022, "7C" should be deleted as Examiner was unable to find a Figure 7C.

Appropriate correction is required.

Claim Objections

3. Claims **7, 15 and 22** are objected to because of the following informalities:

Regarding claim **7**, on line 4, the word "the" before word "fragment" should be "a".

Regarding claim **15**, on line 3, the word "the" before word "fragment" should be "a".

Also, on lines 5 and 9, an objection is made to the use of the phrase “adapted to”. This phrase constitutes “optional language” that does not further limit this claim. See MPEP 2106, II, C.

Regarding claim **22**, on line 1, an objection is made to the use of the phrase “adapted for”. This phrase constitutes “optional language” that does not further limit this claim. See MPEP 2106, II, C.

Appropriate correction is required.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims **16, 19, 20, and 25** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Specifically, claims **16, 19, 20, and 25** are currently directed to a “signal *per se*” with no claimed practical application and thus constitute non-statutory subject matter. Please see “Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility”.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section

351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims **1, 3-11, 15, 16, 19-21, 23, and 25-31** are rejected under 35 U.S.C. 102(e) as being anticipated by LoGalbo et al. (U.S. 6,947,446) (hereinafter "LoGalbo").

LoGalbo teaches all of the limitations of the specified claims with the reasoning that follows.

Regarding claim 1, "segmenting a message into a plurality of segments" is anticipated by the communication of a multimedia call (message) in the form of a plurality of IP packets (segments) as spoken of on column 4, lines 47-53.

"Determining a fragment size and a number of fragments for each of the segments" and "dividing the segments into a plurality of fragments using the fragment size and the number of fragments" is anticipated by the determining of the last block length 650 (fragment size) and total number of blocks 645 (number of fragments) of Figure 6 for each IP packet and the corresponding segmentation of each IP packet (segment) into segments (fragments) as spoken of on column 10, lines 14-36.

Lastly, "transmitting the fragments" is anticipated by the carrying of the IP packet segments within multiple data blocks as spoken of on column 10, lines 16-18.

Regarding claim 3, "applying a segment parameter to each segment" is anticipated by each packet (segment) being assigned a packet number (segment parameter) as spoken of on column 10, lines 18-19.

Regarding claim 4, "applying a segment indicator to each fragment" is anticipated by each segment (fragment) of an IP packet (segment) being assigned a segment number (segment indicator) as spoken of on column 10, lines 19-21.

Regarding claim 5, "A wireless receiving system" is anticipated by repeater 112 (receiving system) of Figure 1.

"Means for building segments of a message from a plurality of transmitted frames" is anticipated by repeater 112 (means) of Figure 1 that segments and formats IP datagrams (frames) of a multimedia call (message) for wireless transmission as spoken of on column 5, lines 33-40.

Lastly, "means for identifying a missing segment of the message", "means for requesting a retransmission of the missing segment", and "means for extracting a segmentation indicator, wherein the segmentation indicator indicates if segmentation is active for retransmission requests" is anticipated by repeater 112 (means) of Figure 1 that determines (identifies) which segments (fragments) of the IP packets (segments) were received in error (missing correct data) by consulting corresponding segment acknowledgment indicators (segmentation indicator) and then initiates the retransmission of that particular data as spoken of on column 12, lines 13-19.

Regarding claim 6, "means for segmenting a message to form a plurality of segments" is anticipated by repeater 112 (means) of Figure 1 that segments and formats IP datagrams (segments) of a multimedia call (message) for wireless transmission as spoken of on column 5, lines 33-40.

"Means for determining a fragment size and a number of fragments for each of the segments" and "means for fragmenting the segments to form a plurality of fragments using the fragment size and the number of fragments" is anticipated by repeater 112 (means) of Figure 1 that determines of the last block length 650 (fragment size) and

total number of blocks 645 (number of fragments) of Figure 6 for each IP packet and the corresponding segmentation of each IP packet (segment) into segments (fragments) as spoken of on column 10, lines 14-36.

"Means for transmitting the plurality of fragments" is anticipated by repeater 112 (means) of Figure 1 that sends datagrams as spoken of on column 5, lines 33-40.

Lastly, "means for retransmitting one of the plurality of fragments" is anticipated by repeater 112 (means) of Figure 1 that initiates the retransmission of data blocks including certain IP packet segments (fragments) as spoken of on column 12, lines 17-19.

Regarding claim 7, "receiving a transmission frame having a plurality of segments, each segment having a plurality of fragments, wherein the fragment size and the number of fragments is determined for each of the segments" is anticipated by the reception of multiple segments (fragments) of several different IP packets (segments) of a multimedia call (frame) spoken of on column 11, lines 52-58 as well as the determining of the last block length 650 (fragment size) and total number of blocks 645 (number of fragments) of Figure 6 for each IP packet as spoken of on column 10, lines 14-36.

Lastly, "determining if any of the plurality of segments is missing; if no segment is missing, reconstructing the message; determining if segmentation is active for retransmission; and if a segment is missing and segmentation is active, requesting retransmission of the missing segment" is anticipated by repeater 112 of Figure 1 that determines which segments (fragments) of the IP packets (segments) were received in

error (missing correct data) by consulting corresponding segment acknowledgment indicators (indicate error-free and errored segments) and then initiates the retransmission of that particular data as spoken of on column 12, lines 13-19.

Regarding claim 8, "processing fragments of the transmission frame" is anticipated by repeater 112 of Figure 1 that determines which segments (fragments) of the IP packets (segments) were received in error as spoken of on column 12, lines 13-19.

Regarding claim 9, "determining an end of a segment; and reconstructing the segment" is anticipated by the use of the last block length 650 of Figure 6 and the corresponding reassembly of the IP packet (segment) as spoken of on column 10, lines 21-23 and 35-39.

Regarding claim 10, "if a segment is missing, sending a negative acknowledge message to the transmitter of the transmission frame" is anticipated by the sending of an acknowledgment data structure 900 of Figure 9 that indicates which segments of each IP packet were received error-free and not error-free as spoken of on column 11, line 50 – column 12, line 19.

Regarding claim 11, "if no segment is missing, sending an acknowledge message to the transmitter of the transmission frame" is anticipated by the sending of an acknowledgment data structure 900 of Figure 9 that indicates which segments of each IP packet were received error-free and not error-free as spoken of on column 11, line 50 – column 12, line 19.

Regarding claim 15, "a wireless apparatus" is anticipated by repeater 112 (apparatus) of Figure 1.

"Receiver for receiving a plurality of transmission frames having a plurality of segments, each segment having a plurality of fragments, wherein the fragment size and number of fragments is determined for each of the segments" is anticipated by repeater 112 (receiver) of Figure 1 that receives multiple segments (fragments) of several different IP packets (segments) of a multimedia call (frame) spoken of on column 11, lines 52-58 as well as the determining of the last block length 650 (fragment size) and total number of blocks 645 (number of fragments) of Figure 6 for each IP packet as spoken of on column 10, lines 14-36.

"Segment extraction unit coupled to the receiver, adapted to identify and reconstruct segments within a transmission frame according to segment indicators associated with segments, wherein at least one of the segment indicators indicates when segmentation is active for retransmission requests" is anticipated by repeater 112 (segment extraction unit) of Figure 1 that segments and formats the transmission of datagrams (segments) spoken of on column 5, lines 33-36, as well as the use of segment numbers (segment indicators) to reassemble an IP packet (segment) as spoken of on column 10, lines 19-23.

Lastly, "message reconstruction unit coupled to the segment extraction unit adapted to determine any missing segment within a message and to request retransmission of the missing segment" is anticipated by repeater 112 (message reconstruction unit) that determines which segments (fragments) of the IP packets

(segments) were received in error (missing correct data) by consulting corresponding segment acknowledgment indicators (indicate error-free and errored segments) and then initiates the retransmission of that particular data as spoken of on column 12, lines 13-19.

Regarding claims **16, 19, 20, and 25**, “a plurality of segments” is anticipated by the communication of a multimedia call in the form of a plurality of IP packets (segments) as spoken of on column 4, lines 47-53.

“A segment parameter” is anticipated by each packet being assigned a packet number (segment parameter) as spoken of on column 10, lines 18-19.

“A segment indicator indicating if segmentation is active for retransmission requests” is anticipated by each of the segments of an IP packet being assigned a segment number (segment indicator) as spoken of on column 10, lines 19-21.

Lastly, “a plurality of fragments, wherein the fragments are used to calculate a segment error rate” is anticipated by the splitting of IP packets (segments) into segments (fragments) that are carried within multiple data blocks as spoken of on column 10, lines 16-18.

Regarding claim **21**, “wherein the segment indicator indicates if segmentation is active for retransmission requests” is anticipated by the segment number (segment indicator) assigned to each IP packet segment that is used for reassembling the IP packet in the correct order as spoken of on column 10, lines 19-23.

Regarding claim **23**, “wherein segment retransmission requests for a segment or a portion of a message are supported for active segmentation, and wherein all

Art Unit: 2616

segments of the message are retransmitted for inactive segmentation” is anticipated by repeater 112 (means) of Figure 1 that determines (identifies) which segments (fragments) of the IP packets (segments) were received in error (missing correct data) by consulting corresponding segment acknowledgment indicators (segmentation indicator) and then initiates the retransmission of that particular data as spoken of on column 12, lines 13-19.

Regarding claim **26**, “determining a first fragment size and a first number of fragments for a first segment; dividing the first segment into the first number of fragments having the first fragment size; determining a second fragment size and a second number of fragments for a second segment; dividing the second segment into the second number of fragments having the second fragment size, wherein the first and second numbers of fragments are different” is anticipated by the total number of blocks field 645 and last block length field 650 within the data link layer headers 310 of Figure 3 that indicate IP packet segment length as well as the number of segments of an IP packet based upon the actual size of the IP packet (different values per IP packet) as spoken of on column 10, lines 23-39.

Regarding claim **27**, “wherein each fragment comprises a frame” is anticipated by the splitting of IP packets (segments) into segments (fragments) that are carried within multiple data blocks as spoken of on column 10, lines 16-18.

Regarding claim **28**, “wherein each fragment is a Service Data Unit” is anticipated by the splitting of IP packets (segments) into segments (fragments) that are carried within multiple data blocks as spoken of on column 10, lines 16-18.

Regarding claim **29**, "wherein each fragment has a sequential fragment identifier" is anticipated by the segment number (sequential fragment identifier) assigned to each IP packet segment (fragment) that is used for reassembling the IP packet in the correct order (sequentially) as spoken of on column 10, lines 19-23.

Regarding claim **30**, "wherein each fragment includes a segment identifier" is anticipated by each segment (fragment) of an IP packet (segment) being assigned a segment number (segment identifier) as spoken of on column 10, lines 19-21.

Regarding claim **31**, "wherein each segment identifier has at least two bits" is anticipated by each segment (fragment) of an IP packet (segment) being assigned a segment number (segment identifier) as spoken of on column 10, lines 19-21.

7. Claims **22 and 24** are rejected under 35 U.S.C. 102(e) as being anticipated by Davis et al. (6,141,784) (hereinafter "Davis"). *Davis* teaches all of the limitations of the specified claims with the reasoning that follows.

Regarding claim **22**, "an apparatus adapted for operation in a wireless communication system" is anticipated by the system 10 (apparatus) shown in Figure 1.

"Means for segmenting a message into a plurality of segments" is anticipated by the transmission of a data message between first and second computer systems (means) in the form of data packets (segments) as spoken of on column 2, lines 29-32.

"Means for determining a fragment size and a number of fragments for each of the segments", "means for dividing the segments into a plurality of fragments using the fragment size and the number of fragments", and "means for transmitting the fragments"

is anticipated by the dividing of packets into segments (fragments) of a certain size as spoken of on column 4, lines 31-36.

"Means for receiving a retransmission request for a first segment of the plurality of segments" is anticipated by the reception of an echo packet (retransmission request) as spoken of on column 6, lines 9-17.

"Means for retransmitting the first segment if segmentation is active for retransmission requests" is anticipated by the sending of an overlay packet with segments received in error in response to the I-field being a non-null value (segmentation active) as shown in Figure 4 and spoken of on column 6, lines 49-65.

Lastly, "means for retransmitting the plurality of segments in response to the request if segmentation is inactive for retransmission requests" is anticipated by the resending of the entire packet in response to the I-field being a null value (segmentation inactive) as shown in Figure 4 and spoken of on column 6, lines 43-47.

Regarding claim 24, "receiving a retransmission request for a first segment of the plurality of segments" is anticipated by the reception of an echo packet (retransmission request) as spoken of on column 6, lines 9-17.

"If segmentation is active for retransmission requests, retransmitting the first segment" is anticipated by the sending of an overlay packet with segments received in error in response to the I-field being a non-null value (segmentation active) as shown in Figure 4 and spoken of on column 6, lines 49-65.

Lastly, "if segmentation is inactive for retransmission requests, retransmitting the plurality of segments in response to the request" is anticipated by the resending of the

Art Unit: 2616

entire packet in response to the I-field being a null value (segmentation inactive) as shown in Figure 4 and spoken of on column 6, lines 43-47.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims **12-14** are rejected under 35 U.S.C. 103(a) as being unpatentable over LoGalbo et al. (U.S. 6,947,446) (hereinafter "LoGalbo") in view of Kuo et al. (U.S. 7,031,343) (hereinafter "Kuo").

Regarding claims **12-14**, *LoGalbo* teaches the method of claim 7. *LoGalbo* does not explicitly teach determining the start of a segment and the storage of information in a buffer from the start of the segment.

However, *Kuo* teaches a packet segmentation method where a variable length packet 730 of Figure 7 is segmented into a plurality of fragments 770, 772 that have a start of fragment code 768 (indicates start of segment) and where packet fragments are stored in a fragment buffer in accordance with time slots as spoken of on column 9, lines 55-64.

At the time of the invention, it would have been obvious to someone of ordinary skill in the art, given these references, to combine the fragment code and buffering teachings of *Kuo* with the packet segmentation teachings of *LoGalbo* in order to provide a further indication of when all fragments of a particular packet have been received as spoken of on column 9, lines 40-64 of *Kuo*.

Response to Arguments

11. Applicant's arguments with respect to *amended* claims **1, 3-16, and 21-23** have been considered but are moot in view of the new ground(s) of rejection provided above.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Bradshaw et al. (U.S. 6,665,292) and Huo (U.S. 7,197,024) are other references considered pertinent to this application.

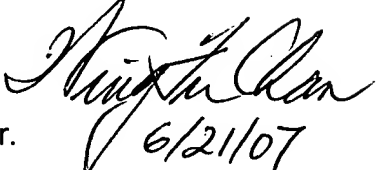
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Moore, Jr. whose telephone number is (571) 272-3168. The examiner can normally be reached on Monday-Friday (7:30am - 4:00pm).

Art Unit: 2616

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wing F. Chan can be reached on (571) 272-7493. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Michael J. Moore, Jr.
Examiner
Art Unit 2616



6/21/07

WING CHAN
SUPERVISORY PATENT EXAMINER

mjm **MM**